

**REMARKS**

As a preliminary matter, Applicants appreciate the Examiner's indication that claims 12 and 13 contain allowable subject matter. Reconsideration of this application and the allowance of the rejected claims 1-11 and 14-22 are respectfully requested. Applicants have attempted to address every ground for rejection in the Office Action dated February 3, 2009 (Paper No. 20090201) and believe the application is now in condition for allowance or in better form for appeal. The claims have been amended to clarify the invention.

Claims 1-10 and 14-22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Parmentier et al. (U.S. Patent No. 3,717,773). Parmentier is directed to a neuristor-type transmission line for actively propagating pulses. That is, as shown in Fig. 1 of Parmentier, a transmission line 20 includes two superconductive line conductors 22, 24 separated by a single barrier layer 26 that is thin enough to allow electrons to cross over through a tunneling effect. Thus, Parmentier discloses a transmission line that includes multiple superconductive line conductors, but only one barrier layer. Further, Parmentier fails to disclose any particular inductive performance obtained by the neuristor-type transmission line, nor does the reference disclose any desired behavior regarding the inductance of the transmission line.

Claims 1, 14, 20, and 21 of the present application have been amended to recite, among other things, that a stack of alternately superconductive and insulating thin layers includes a plurality of insulating layers and a plurality of superconductive layers.

As discussed above, Parmentier merely discloses a neuristor-type transmission line having a single barrier layer, and not a stack containing multiple insulating films, as recited in claims 1, 14, 20, and 21.

Moreover, claims 1, 14, 20, and 21 also recite, *inter alia*, that the claimed component is “highly inductive.” That is, the component exhibits more inductive behavior than a bare conductive line would exhibit. To that end, Fig. 6 of the present Application indicates that the inductance of the component is 535  $\mu$ H, and that values on the order of several tens of microhenries (i.e., at least 20  $\mu$ H) could be reliably obtained with components having an identical form to those tested. In contrast, the inductance of a bare conductive line is known to be approximately 1 nanohenry per linear centimeter. For a bare conductive line having the same dimensions as the tested sample (a 10  $\mu$ m x 20  $\mu$ m bridge), the expected inductance would be approximately 1 picohenry. Thus, the inductance value of the component described in Applicants’ specification is larger than a bare conductive line by a factor of about  $10^7$ . As discussed above, Parmentier is silent regarding the specific inductance in the neuristor-type transmission lines, and fails to disclose any desired behavior regarding the transmission line inductance. Accordingly, the reference fails to disclose a highly inductive component, as recited in independent claims 1, 14, 20, and 21.

For these reasons, the rejection based on Parmentier is respectfully traversed. For at least the reasons identified above, Applicants respectfully submit that

amended claims 1, 14, 20, and 21, and the claims that depend therefrom, are each patentably distinguished over Parmentier, and in condition for allowance.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Parmentier in view of Lewis et al. (U.S. Patent No. 6,013,229). Claim 11 ultimately depends from claim 1, and consequently includes the features of claim 1, plus additional features. Accordingly, Applicants traverse the rejection of claim 11 for the reasons described above with respect to independent claim 1, and because Lewis fails to remedy the deficiencies identified above with respect to Parmentier.

The Examiner cites Lewis only to disclose that tuning means includes a compound constituted by a polymer including metal particles. However, Lewis is silent regarding a stack of alternately superconductive and insulating thin layers, including a plurality of insulating layers. Similarly, the reference also fails to disclose or suggest a highly inductive component, as recited in claim 1. Accordingly, Lewis, whether taken alone or in combination with Parmentier, fails to disclose or suggest the features of Claim 11.

Moreover, Lewis is directed to an analyte detection sensor array. Thus, there would be no suggestion, motivation, or other reason for one of ordinary skill in the art to combine the polymer disclosed in Lewis with the neuristor-type transmission line disclosed in Parmentier. For at least these reasons, Applicants respectfully submit that Claim 11 is patentably distinguished over Parmentier and Lewis, and in condition for allowance.

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In view of the above remarks, the application is respectfully submitted to be in allowable form. Allowance of the rejected claims is respectfully requested. In the alternative, the claims are submitted to be in better form for appeal. Should the Examiner discover there are remaining issues which may be resolved by a telephone interview, he is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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